

STATE OF TEXAS §
 §
COUNTY OF FORT BEND §

AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES

THIS AGREEMENT is made and entered into by and between Fort Bend County, (hereinafter “County”), a body corporate and politic under the laws of the State of Texas, and Cobb, Fendley & Associates, Inc., (hereinafter “Consultant”), a company authorized to conduct business in the State of Texas.

WITNESSETH

WHEREAS, County desires that Consultant provide professional engineering services for the construction of the proposed left turn lane along State Highway 6 at the Cullinan Park entrance under 2020 Mobility Bond Project No. 20407 (hereinafter “Services”) pursuant to SOQ 14-025; and

WHEREAS, County has determined Consultant is the most highly qualified provider of the desired Services on the basis of demonstrated competence and qualifications, and County and Consultant have negotiated to reach a fair and reasonable amount of compensation for the provision of such Services, as required under Chapter 2254 of the Texas Government Code; and

WHEREAS, Consultant represents that it is qualified and desires to perform such services.

NOW, THEREFORE, in consideration of the mutual covenants and conditions set forth below, the parties agree as follows:

AGREEMENT

Section 1. Scope of Services

Consultant shall render the professional engineering services as described in Consultant’s proposal dated November 3, 2021, attached hereto as Exhibit A, and incorporated herein for all purposes.

Section 2. Personnel

2.1 Consultant represents that it presently has, or is able to obtain, adequate qualified personnel in its employment for the timely performance of the Scope of Services required under this Agreement and that Consultant shall furnish and maintain, at its own expense, adequate and sufficient personnel, in the opinion of County, to perform the Scope of Services when and as required and without delays.

2.2 All employees of Consultant shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of Consultant who, in the

opinion of County, is incompetent or by his conduct becomes detrimental to the project shall, upon request of County, immediately be removed from association with the project.

Section 3. Compensation and Payment

3.1 Consultant's fees shall be calculated at the rates set forth in the attached Exhibit A. The Maximum Compensation for the performance of Services within the Scope of Services described in Exhibit A is one hundred forty-six thousand eighty-seven dollars and no/100 (\$146,087.00) as set forth in Exhibit A. In no case shall the amount paid by County under this Agreement exceed the Maximum Compensation without a written agreement executed by the parties.

3.2 All performance of the Scope of Services by Consultant including any changes in the Scope of Services and revision of work satisfactorily performed will be performed only when approved in advance and authorized by County.

3.3 County will pay Consultant based on the following procedures: Upon completion of the tasks identified in the Scope of Services, Consultant shall submit to County staff person designated by the County Engineer, one (1) electronic (pdf) copy of the invoice showing the amounts due for services performed in a form acceptable to County. County shall review such invoices and approve them within 30 calendar days with such modifications as are consistent with this Agreement and forward same to the Auditor for processing. County shall pay each such approved invoice within thirty (30) calendar days. County reserves the right to withhold payment pending verification of satisfactory work performed.

Section 4. Limit of Appropriation

4.1 Consultant clearly understands and agrees, such understanding and agreement being of the absolute essence of this Agreement, that County shall have available the total maximum sum of one hundred forty-six thousand eighty-seven dollars and no/100 (\$146,087.00) specifically allocated to fully discharge any and all liabilities County may incur.

4.2 Consultant does further understand and agree, said understanding and agreement also being of the absolute essence of this Agreement, that the total maximum compensation that Consultant may become entitled to and the total maximum sum that County may become liable to pay to Consultant shall not under any conditions, circumstances, or interpretations thereof exceed one hundred forty-six thousand eighty-seven dollars and no/100 (\$146,087.00).

Section 5. Time of Performance

Time for performance of the Scope of Services under this Agreement shall begin with receipt of the Notice to Proceed and end no later than December 31, 2026. Consultant shall complete the tasks described in the Scope of Services, within this time or within such additional time as may be extended by the County.

Section 6. Modifications and Waivers

6.1 The parties may not amend or waive this Agreement, except by a written agreement executed by both parties.

6.2 No failure or delay in exercising any right or remedy or requiring the satisfaction of any condition under this Agreement, and no course of dealing between the parties, operates as a waiver or estoppel of any right, remedy, or condition.

6.3 The rights and remedies of the parties set forth in this Agreement are not exclusive of, but are cumulative to, any rights or remedies now or subsequently existing at law, in equity, or by statute.

Section 7. Termination

7.1 Termination for Convenience – County may terminate this Agreement at any time upon forty-eight (48) hours written notice.

7.2 Termination for Default

7.2.1 County may terminate the whole or any part of this Agreement for cause in the following circumstances:

7.2.1.1 If Consultant fails to perform services within the time specified in the Scope of Services or any extension thereof granted by the County in writing;

7.2.1.2 If Consultant materially breaches any of the covenants or terms and conditions set forth in this Agreement or fails to perform any of the other provisions of this Agreement or so fails to make progress as to endanger performance of this Agreement in accordance with its terms, and in any of these circumstances does not cure such breach or failure to County’s reasonable satisfaction within a period of ten (10) calendar days after receipt of notice from County specifying such breach or failure.

7.2.2 If, after termination, it is determined for any reason whatsoever that Consultant was not in default, or that the default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the County in accordance with Section 7.1 above.

7.3 Upon termination of this Agreement, County shall compensate Consultant in accordance with Section 3, above, for those services which were provided under this Agreement prior to its termination and which have not been previously invoiced to County. Consultant’s final invoice for said services will be presented to and paid by County in the same manner set forth in Section 3 above.

7.4 If County terminates this Agreement as provided in this Section, no fees of any type, other than fees due and payable at the Termination Date, shall thereafter be paid to Consultant.

Section 8. Ownership and Reuse of Documents

All documents, data, reports, research, graphic presentation materials, etc., developed by Consultant as a part of its work under this Agreement, shall become the property of County upon completion of this Agreement, or in the event of termination or cancellation thereof, at the time of payment under Section 3 for work performed. Consultant shall promptly furnish all such data and material to County on request.

Section 9. Inspection of Books and Records

Consultant will permit County, or any duly authorized agent of County, to inspect and examine the books and records of Consultant for the purpose of verifying the amount of work performed under the Scope of Services. County's right to inspect survives the termination of this Agreement for a period of four years.

Section 10. Insurance

10.1 Prior to commencement of the Services, Consultant shall furnish County with properly executed certificates of insurance which shall evidence all insurance required and provide that such insurance shall not be canceled, except on 30 days' prior written notice to County. Consultant shall provide certified copies of insurance endorsements and/or policies if requested by County. Consultant shall maintain such insurance coverage from the time Services commence until Services are completed and provide replacement certificates, policies and/or endorsements for any such insurance expiring prior to completion of Services. Consultant shall obtain such insurance written on an Occurrence form (or a Claims Made form for Professional Liability insurance) from such companies having Best's rating of A/VII or better, licensed or approved to transact business in the State of Texas, and shall obtain such insurance of the following types and minimum limits:

10.1.1 Workers' Compensation insurance. Substitutes to genuine Workers' Compensation Insurance will not be allowed.

10.1.2 Employers' Liability insurance with limits of not less than \$1,000,000 per injury by accident, \$1,000,000 per injury by disease, and \$1,000,000 per bodily injury by disease.

10.1.3 Commercial general liability insurance with a limit of not less than \$1,000,000 each occurrence and \$2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising out of the business operations of the policyholder.

10.1.4 Business Automobile Liability insurance with a combined Bodily Injury/Property Damage limit of not less than \$1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.

10.1.5 Professional Liability insurance may be made on a Claims Made form with limits not less than \$1,000,000.

10.2 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability. All Liability policies including Workers' Compensation written on behalf of Consultant shall contain a waiver of subrogation in favor of County and members of Commissioners Court.

10.3 If required coverage is written on a claims-made basis, Consultant warrants that any retroactive date applicable to coverage under the policy precedes the effective date of the contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of 2 years beginning from the time that work under the Agreement is completed.

Section 11. Indemnity

CONSULTANT SHALL INDEMNIFY AND HOLD HARMLESS COUNTY AGAINST LOSSES, LIABILITIES, CLAIMS, AND CAUSES OF ACTION, INCLUDING THE REIMBURSEMENT OF COUNTY'S REASONABLE ATTORNEYS FEES IN PROPORTION TO CONSULTANT'S LIABILITY, ARISING FROM ACTIVITIES OF CONSULTANT, ITS AGENTS, SERVANTS OR EMPLOYEES, PERFORMED UNDER THIS AGREEMENT THAT RESULT FROM THE NEGLIGENT ACT, INTENTIONAL TORT, ERROR, OR OMISSION OF CONSULTANT OR ANY OF CONSULTANT'S AGENTS, SERVANTS OR EMPLOYEES.

Section 12. Confidential and Proprietary Information

12.1 Consultant acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Agreement, be exposed to or acquire information that is confidential to County. Any and all information of any form obtained by Consultant or its employees or agents from County in the performance of this Agreement shall be deemed to be confidential information of County ("Confidential Information"). Any reports or other documents or items (including software) that result from the use of the Confidential Information by Consultant shall be treated with respect to confidentiality in the same manner as the Confidential Information. Confidential Information shall be deemed not to include information that (a) is or becomes (other than by disclosure by Consultant) publicly known or is contained in a publicly available document; (b) is rightfully in Consultant's possession without the obligation of nondisclosure prior to the time of its disclosure under this Agreement; or (c) is independently developed by employees or agents of Consultant who can be shown to have had no access to the Confidential Information.

12.2 Consultant agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Consultant uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of Services to County hereunder, and to advise each of its employees and agents of their obligations to keep Confidential Information confidential. Consultant shall use its best efforts to assist County in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limitation of the foregoing, Consultant shall advise County

immediately in the event Consultant learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Consultant will at its expense cooperate with County in seeking injunctive or other equitable relief in the name of County or Consultant against any such person. Consultant agrees that, except as directed by County, Consultant will not at any time during or after the term of this Agreement disclose, directly or indirectly, any Confidential Information to any person, and that upon termination of this Agreement or at County's request, Consultant will promptly turn over to County all documents, papers, and other matter in Consultant's possession which embody Confidential Information.

12.3 Consultant acknowledges that a breach of this Section, including disclosure of any Confidential Information, or disclosure of other information that, at law or in equity, ought to remain confidential, will give rise to irreparable injury to County that is inadequately compensable in damages. Accordingly, County may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies that may be available. Consultant acknowledges and agrees that the covenants contained herein are necessary for the protection of the legitimate business interest of County and are reasonable in scope and content.

12.4 Consultant in providing all services hereunder agrees to abide by the provisions of any applicable Federal or State Data Privacy Act.

12.5 Consultant expressly acknowledges that County is subject to the Texas Public Information Act, TEX. GOV'T CODE ANN. §§ 552.001 *et seq.*, as amended, and notwithstanding any provision in the Agreement to the contrary, County will make any information related to the Agreement, or otherwise, available to third parties in accordance with the Texas Public Information Act. Any proprietary or confidential information marked as such provided to County by Consultant shall not be disclosed to any third party, except as directed by the Texas Attorney General in response to a request for such under the Texas Public Information Act, which provides for notice to the owner of such marked information and the opportunity for the owner of such information to notify the Attorney General of the reasons why such information should not be disclosed.

Section 13. Independent Consultant

13.1 In the performance of work or services hereunder, Consultant shall be deemed an independent contractor, and any of its agents, employees, officers, or volunteers performing work required hereunder shall be deemed solely as employees of contractor or, where permitted, of its subcontractors.

13.2 Consultant and its agents, employees, officers, or volunteers shall not, by performing work pursuant to this Agreement, be deemed to be employees, agents, or servants of County and shall not be entitled to any of the privileges or benefits of County employment.

Section 14. Notices

14.1 Each party giving any notice or making any request, demand, or other communication (each, a “Notice”) pursuant to this Agreement shall do so in writing and shall use one of the following methods of delivery, each of which, for purposes of this Agreement, is a writing: personal delivery, registered or certified mail (in each case, return receipt requested and postage prepaid), or nationally recognized overnight courier (with all fees prepaid).

14.2 Each party giving a Notice shall address the Notice to the receiving party at the address listed below or to another address designated by a party in a Notice pursuant to this Section:

County: Fort Bend County Engineering Department
Attn: County Engineer
301 Jackson Street
Richmond, Texas 77469

With a copy to: Fort Bend County
Attn: County Judge
401 Jackson Street, 1st Floor
Richmond, Texas 77469

Consultant: Cobb, Fendley & Associates, Inc.
13430 Northwest Fwy, Suite 1100
Houston, Texas 77040

14.3 A Notice is effective only if the party giving or making the Notice has complied with subsections 14.1 and 14.2 and if the addressee has received the Notice. A Notice is deemed received as follows:

14.3.1 If the Notice is delivered in person, or sent by registered or certified mail or a nationally recognized overnight courier, upon receipt as indicated by the date on the signed receipt.

14.3.2 If the addressee rejects or otherwise refuses to accept the Notice, or if the Notice cannot be delivered because of a change in address for which no Notice was given, then upon the rejection, refusal, or inability to deliver.

Section 15. Compliance with Laws

Consultant shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any matter affecting the performance of this Agreement, including, without limitation, Worker’s Compensation laws, minimum and maximum salary and wage statutes and regulations, licensing laws and regulations. When required by County, Consultant shall furnish County with certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees above specified.

Section 16. Standard of Care

Consultant represents shall perform the Services to be provided under this Agreement with the professional skill and care ordinarily provided by competent engineers practicing under the same or similar circumstances and professional license. Further, Consultant shall perform the Services as expeditiously as is prudent considering the ordinary professional skill and care of a competent engineer.

Section 17. Assignment

17.1 Neither party may assign any of its rights under this Agreement, except with the prior written consent of the other party. That party shall not unreasonably withhold its consent. All assignments of rights are prohibited under this subsection, whether they are voluntarily or involuntarily, by merger, consolidation, dissolution, operation of law, or any other manner.

17.2 Neither party may delegate any performance under this Agreement.

17.3 Any purported assignment of rights or delegation of performance in violation of this Section is void.

Section 18. Applicable Law

The laws of the State of Texas govern all disputes arising out of or relating to this Agreement. The parties hereto acknowledge that venue is proper in Fort Bend County, Texas, for all legal actions or proceedings arising out of or relating to this Agreement and waive the right to sue or be sued elsewhere. Nothing in the Agreement shall be construed to waive the County's sovereign immunity.

Section 19. Successors and Assigns

County and Consultant bind themselves and their successors, executors, administrators and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of the other party, in respect to all covenants of this Agreement.

Section 20. Third Party Beneficiaries

This Agreement does not confer any enforceable rights or remedies upon any person other than the parties.

Section 21. Severability

If any provision of this Agreement is determined to be invalid, illegal, or unenforceable, the remaining provisions remain in full force, if the essential terms and conditions of this Agreement for each party remain valid, binding, and enforceable.

Section 22. Publicity

Contact with citizens of Fort Bend County, media outlets, or governmental agencies shall be the sole responsibility of County. Under no circumstances whatsoever, shall Consultant release any material or information developed or received in the performance of the Services

hereunder without the express written permission of County, except where required to do so by law.

Section 23. Captions

The section captions used in this Agreement are for convenience of reference only and do not affect the interpretation or construction of this Agreement.

Section 24. Conflict

In the event there is a conflict between this Agreement and the attached exhibits, this Agreement controls.

Section 25. Certain State Law Requirements for Contracts

For purposes of sections 2252.152, 2271.002, and 2274.002, Texas Government Code, as amended, Consultant hereby verifies that Consultant and any parent company, wholly owned subsidiary, majority-owned subsidiary, and affiliate:

25.1 Unless affirmatively declared by the United States government to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization, is not identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 806.051, 807.051, or 2252.153 of the Texas Government Code.

25.2 If employing ten (10) or more full-time employees and this Agreement has a value of \$100,000.00 or more, Consultant does not boycott Israel and is authorized to agree in such contracts not to boycott Israel during the term of such contracts. "Boycott Israel" has the meaning provided in section 808.001 of the Texas Government Code.

25.3 If employing ten (10) or more full-time employees and this Agreement has a value of \$100,000.00 or more, Consultant does not boycott energy companies and is authorized to agree in such contracts not to boycott energy companies during the term of such contracts. "Boycott energy company" has the meaning provided in section 809.001 of the Texas Government Code.

25.4 If employing ten (10) or more full-time employees and this Agreement has a value of \$100,000.00 or more, Consultant does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and is authorized to agree in such contracts not to discriminate against a firearm entity or firearm trade association during the term of such contracts. "Discriminate against a firearm entity or firearm trade association" has the meaning provided in section 2274.001(3) of the Texas Government Code. "Firearm entity" and "firearm trade association" have the meanings provided in section 2274.001(6) and (7) of the Texas Government Code.

Section 26. Human Trafficking

BY ACCEPTANCE OF AGREEMENT, CONSULTANT ACKNOWLEDGES THAT THE COUNTY IS OPPOSED TO HUMAN TRAFFICKING AND THAT NO COUNTY FUNDS WILL BE USED IN SUPPORT OF SERVICES OR ACTIVITIES THAT VIOLATE HUMAN TRAFFICKING LAWS.

IN WITNESS WHEREOF, the parties hereto have signed or have caused their respective names to be signed to multiple counterparts to be effective on the date signed by the last party hereto.

FORT BEND COUNTY

COBB, FENDLEY & ASSOCIATES, INC

KP George, County Judge



Authorized Agent – Signature

Date

Charles M. Eastland

Authorized Agent – Printed Name

ATTEST:

Exec. Vice President

Title

Laura Richard, County Clerk

12/13/21

Date

APPROVED:

J. Stacy Slawinski, P.E., County Engineer

AUDITOR'S CERTIFICATE

I hereby certify that funds are available in the amount of \$_____ to accomplish and pay the obligation of Fort Bend County under this contract.

Robert Ed Sturdivant, County Auditor

EXHIBIT A



November 3, 2021

Mr. Stacy Slawinski, P.E.
Fort Bend County Engineer
C/O Mr. Robert McBride, P.E.
LJA Engineering, Inc.
2929 Briarpark Drive, Suite 600
Houston, Texas 77042-3703

Re: Proposal for a proposed Left-Turn-Lane
along SH 6 at Cullinan Park entrance
Fort Bend County Mobility Bond Project #20407

Dear Mr. Slawinski:

Cobb, Fendley & Associates, Inc. (CobbFendley) is pleased to provide this proposal to Fort Bend County in connection with a proposed left-turn-lane along SH 6 at Cullinan Park entrance; Mobility Bond Program Project No. 20407 for PCT 4 of Fort Bend County, Texas. The project limits along SH 6 are at the entrance to Cullinan Park for approximately 400-ft in length.

Scope of Services

The proposed scope is comprised of 3 phases: Phase I - Preliminary Design Services (PER and Drainage Study), Phase II - Final Design and Bid Phase Services, and Phase III (Construction Phase Services). The deliverables will include construction Plans, Specifications, and Estimate (PS&E) package. Enclosed are CobbFendley’s proposed scope of services and budget, manpower, and direct expense breakdown for completing PER, final design, and surveying services for the above referenced project.

CobbFendley proposed budget for the referenced project as follow:

Basic Services

Phase I – Preliminary Design Services (Lump-Sum).....	\$ 42,064
Phase II – Final Design and Bid Phase Services (Lump-Sum).....	\$ 45,969
Phase III – Construction Phase Services (Lump-Sum).....	\$ 20,000
<hr/>	
Subtotal Basic Services Fee	\$ 108,033

Additional Services

Topographical Surveying (Lump-Sum)	\$ 20,618
Right-of-Way Mapping, Exhibits, and Metes & Bounds (Lump-Sum)	\$ 15,764
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Subtotal Additional Services Fee	\$ 36,382

Reimbursable Direct Expenses

Direct Expenses.....	\$ 1,672
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Subtotal Reimbursable Direct Expenses	\$ 1,672

TOTAL FEE REQUESTED FOR COMPLETION OF PROJECT \$ 146,087

We respectfully request a total budget of \$146,087.00 for the abovementioned professional services. Detailed scope of services and the level of effort for the basic services, additional services, and reimbursable expenses are attached.

Additional Services (to be provided upon Client authorization)

CobbFendley will perform additional services if required based on an hourly basis mutually agreed upon by Fort Bend County and CobbFendley by written authorization.

EXCLUSIONS FROM THE SCOPE OF SERVICES

Specific items excluded from this proposal are as follows, and Cobb Fendley shall have no responsibility to perform any of these services.

1. Fees for Fort Bend County and TCEQ review applications and project advertising.
2. Environmental investigation, assessment, documentation, permitting, etc.
3. Geotechnical investigation.
4. Subsurface Utility Engineering investigations.
5. Utility design services.
6. Non-standard small signs, large signs, and overhead signs and structures.
7. Landscaping, irrigation, and hardscape design.
8. Traffic Impact Analysis (TIA) and/or traffic signal design.
9. Developing LOMR/CLOMR or Coordination with FEMA.
10. Any other services not specifically included within the description of the Basic and Additional Services as described above.

SPECIAL PROVISIONS

CobbFendley will perform only such Additional Services, as are specifically agreed to in writing by Client and CobbFendley. Charges for Additional Services will be in accordance with the attached rate schedule. A copy of the *General Terms and Conditions of the Authorization for Professional Services* is attached and constitutes a part of this agreement.

SCHEDULE OF SERVICES

CobbFendley will begin work on this project immediately upon receipt of Client's signature on this Authorization. CobbFendley will use reasonable efforts to complete the proposed design work within the time frames stated in the scope of services.

PROPOSAL ACCEPTANCE

If this proposal is agreeable to you, please indicate your acceptance by signing in the space provided below and return one copy to us for our file. This proposal is void if not accepted within thirty days of the date hereon. The opportunity to propose professional engineering services to your firm is appreciated and we look forward to serving you on this project.

We appreciate the opportunity to submit this proposal and look forward to working with Fort Bend County throughout the remainder of this project. If you have any questions or require any additional information, I can be reached at 713-462-3242.

This proposal accepted by:

COBBFENDLEY



W. Matthew Adams, P.E.

**FORT BEND COUNTY
ENGINEERING DEPARTMENT**

_____ Principal
Signature

Print Name

Title

Date of Authorization

Attachments



CITY OF SUGAR LAND

CULLINAN PARK

HULL LN

SH 6

0' 100' 200'

SCALE: 1"=200'

PROJECT:

SH 6 AT CULLINAN PARK

PROJECT No. 20407





FROM: SH6 AT CULLINAN PARK

400 LF

DESCRIPTION:

LEFT TURN LANE ON SH6 INTO CULLINAN PARK

LEGEND:

-  PROPOSED ROADWAY
-  ROAD CENTERLINE
-  EXISTING ROW
-  PROPOSED ROW

FORT BEND COUNTY
2020 MOBILITY BOND PROGRAM



CobbFendley Fee Summary

SH 6 Left Turn Lane at Cullinan Park Fort Bend County Project No. 20407

Sponsor: Fort Bend County

Description: Adding left turn lane along SH 6 into Cullinan Park

Date: 11/3/2021

Basic Services

Phase I - PER and Drainage Study (Lump-Sum)	\$	42,064
Phase II - Final Design and Bid Phase (Lump-Sum)	\$	45,969
Phase III - Construction Phase Services (Lump-Sum)	\$	20,000
Subtotal	\$	108,033

Additional Services

Topo Survey (Lump-Sum)	\$	20,618
ROW Mapping, Exhibits, Metes & Bounds, etc. for one (1) proposed parcel (Lump-Sum)	\$	15,764
Subtotal Additional Services	\$	36,382

Reimbursables

Reimbursable Expenses	\$	1,672
Subtotal Reimbursable Expenses	\$	1,672

PROJECT GRAND TOTAL	\$	146,087
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CobbFendley Fee Summary - Phases I and II - Costs

**SH 6 Left Turn Lane at Cullinan Park
Fort Bend County Project No. 20407**

Sponsor: Fort Bend County

Description: Adding left turn lane along SH 6 into Cullinan Park

Date: 10/18/2021

OVERALL BASIC SERVICES - PHASE I and II			
Classification	Hours	Rate	Labor Cost
Principal	16	\$299.00	\$4,784.00
Project Manager	70	\$242.00	\$16,940.00
Senior Hydrologist Engineer	17	\$242.00	\$4,114.00
Project Engineer III	51	\$201.00	\$10,251.00
Project Engineer I	203	\$155.00	\$31,465.00
Senior Technician	92	\$149.00	\$13,708.00
CAD Operator	53	\$103.00	\$5,459.00
Clerical	16	\$82.00	\$1,312.00
Total Labor	518		\$88,033.00

SUBTOTAL - CFA SERVICES - PHASES I and II \$88,033.00

PHASE I - PER, INCLUDING DRAINAGE STUDY			
Classification	Hours	Rate	Labor Cost
Principal	4	\$299.00	\$1,196.00
Project Manager	27	\$242.00	\$6,534.00
Senior Hydrologist Engineer	17	\$242.00	\$4,114.00
Project Engineer III	33	\$201.00	\$6,633.00
Project Engineer I	117	\$155.00	\$18,135.00
Senior Technician	21	\$149.00	\$3,129.00
CAD Operator	13	\$103.00	\$1,339.00
Clerical	12	\$82.00	\$984.00
Total Labor	244		\$42,064.00

SUBTOTAL - CFA SERVICES - PHASE I \$42,064.00

PHASE II - FINAL DESIGN, INCLUDING BIDDING			
Classification	Hours	Rate	Labor Cost
Principal	12	\$299.00	\$3,588.00
Project Manager	43	\$242.00	\$10,406.00
Senior Hydrologist Engineer	0	\$242.00	\$0.00
Project Engineer III	18	\$201.00	\$3,618.00
Project Engineer I	86	\$155.00	\$13,330.00
Senior Technician	71	\$149.00	\$10,579.00
CAD Operator	40	\$103.00	\$4,120.00
Clerical	4	\$82.00	\$328.00
Total Labor	274		\$45,969.00

SUBTOTAL - CFA SERVICES - PHASE II \$45,969.00

CobbFendley Manhour Estimate - Phases I and II - Manhours

**SH 6 Left Turn Lane at Cullinan Park
Fort Bend County Project No. 20407**

Sponsor: Fort Bend County

Description: Adding left turn lane along SH 6 into Cullinan Park

Date: 10/18/2021

Manhour Estimate									
Task	Principal	Project Manager	Senior Hydrologist Engineer	Project Engineer III	Project Engineer I	Senior Technician	CAD Operator	Clerical	Total Hours
Project Management									
Project kick-off meeting (1)	0	2	0	0	2	0	0	0	4
Attend status meetings (8)	0	8	0	0	8	0	0	0	16
Prepare invoice (monthly) (8)	0	8	0	0	0	0	0	8	16
Project coordination (project staff & subs)	0	12	0	0	16	0	0	0	28
Total Project Management*	0	30	0	0	26	0	0	8	64
* PROJECT MANAGEMENT HOURS ARE DISTRIBUTED AT 50% TOWARDS EACH OF PHASE I and II.									
PHASE I - PRELIMINARY ENGINEERING REPORT - PER (30%)									
Data collection	0	1	0	0	2	0	0	0	3
Conduct field visits	0	2	0	0	2	0	0	0	4
Meetings/Coordination with FBC Drainage District and affiliated managing consultants	0	2	0	0	2	0	0	0	4
Typical sections	0	1	0	0	1	4	0	0	6
Horz/Vert alignments	0	1	0	1	3	2	0	0	7
Schematic Layout/ 30% Plan production	0	1	0	1	1	4	6	0	13
Cross sections	0	0	0	1	2	4	2	0	9
Limited Traffic Engineering (TCP phasing)	0	0	0	1	1	2	3	0	7
Utility research, Public & Private Utility coordination, adjustment, relocation	0	1	0	2	4	0	0	0	7
Construction cost estimate	0	1	0	0	1	1	0	0	3
Compile the Updated Report/Exhibits/Charts	0	2	0	1	8	4	2	4	21
QA/QC	2	0	0	0	0	0	0	0	2
Subtotal PER/30% Submittal	2	12	0	7	27	21	13	4	86

Task	Principal	Project Manager	Senior Hydrologist Engineer	Project Engineer III	Project Engineer I	Senior Technician	CAD Operator	Clerical	Total Hours
PHASE I - DRAINAGE STUDY									
DATA COLLECTION AND COORDINATION									
Collection, Review and Analysis of Existing Plans, H&H Data, Maps and Reports	0	0	1	0	2	0	0	0	3
EXISTING CONDITION ANALYSIS									
Analyze LiDAR Data to determine existing condition overland sheet flow patterns	0	0	1	0	3	0	0	0	4
Identify and locate existing condition outfall locations and drainage systems	0	0	1	0	1	0	0	0	2
Analyze existing terrain for overland flow paths	0	0	1	1	3	0	0	0	5
Plot Existing WSE from receiving stream (Oyster Creek) for 10-, 25-, and 100-yr rainfall events along existing roadway profile	0	0	1	0	2	0	0	0	3
Determine Existing Condition drainage areas, create drainage area map	0	0	1	1	4	0	0	0	6
Perform existing condition hydrologic calculations (2-, 10-, 25-, 100-, and 500-year Atlas 14 rainfall events) Fort Bend County Drainage District Criteria	0	0	1	2	4	0	0	0	7
Analyze conveyance capacity of existing condition drainage system, roadside ditches, & culverts to identify problem areas and establish baseline condition for mitigation	0	0	1	4	8	0	0	0	13
PROPOSED CONDITION ANALYSIS									
Determine Proposed Condition drainage areas and create drainage area map based upon appropriate roadway design	0	0	1	2	4	0	0	0	7
Perform proposed condition hydrologic calculations (2-, 10-, 25-, 100- and 500-year Atlas 14 rainfall events)	0	0	1	2	4	0	0	0	7
Perform comparison between existing and proposed condition hydrology to determine impervious cover mitigation volume required (incorporate provided floodplain fill volume)	0	0	1	1	4	0	0	0	6
Develop proposed drainage conveyance system	0	0	1	2	4	0	0	0	7
Revise HEC-HMS/RAS models to include proposed improvements and compare against revised existing condition (if applicable)	0	0	1	0	2	0	0	0	3
Develop measures to mitigate increases in flow and/or HGL associated with the proposed roadway improvement project. (up to 3 alternatives)	0	0	1	2	8	0	0	0	11
REPORT PREP									
Write preliminary drainage study report	0	0	1	4	12	0	0	4	21
Prepare cost estimate(s) for drainage related items	0	0	1	0	1	0	0	0	2
Prepare maps and exhibits for report	0	0	0	2	6	0	0	0	8
QA/QC SUBMITTAL	2	0	1	1	1	0	0	0	5
ADDRESS ANY/ALL REVIEW COMMENTS	0	0	0	2	4	0	0	0	6
Subtotal Drainage Study	2	0	17	26	77	0	0	4	126
Subtotal - Phase I - PER/30% and Drainage Study	4	27	17	33	117	21	13	12	244

Task	Principal	Project Manager	Senior Hydrologist Engineer	Project Engineer III	Project Engineer I	Senior Technician	CAD Operator	Clerical	Total Hours
PHASE II - Final Design - 70% submittal									
Refine horz/vert alignments	0	1	0	0	1	1	0	0	3
Drainage Area Map	0	1	0	0	2	4	2	0	9
Utility research, adjustment, relocation	0	0	0	0	4	4	0	0	8
Cover sheet/Index Sheet (2 Sheets)	0	0	0	0	1	0	3	0	4
Typical sections (1 Sheets)	0	0	0	0	1	3	1	0	5
Layout sheet (1 Sheets)	0	0	0	0	0	2	2	0	4
Roadway Plan & profiles sheets (1 Sheets)	0	2	0	2	6	8	6	0	24
Traffic control plan (1 Sheets)	0	1	0	1	2	4	2	0	10
Cross sections	0	0	0	1	2	3	1	0	7
Signing & Pavement Marking	0	0	0	1	2	4	1	0	8
SWPPP	0	0	0	1	1	3	1	0	6
Misc. Details	0	1	0	0	1	4	2	0	8
Quantities	0	0	0	0	2	2	0	0	4
Cost Estimates	0	1	0	0	4	0	0	0	5
QA/QC	4	0	0	0	0	0	0	0	4
Subtotal 70% Submittal	4	7	0	6	29	42	21	0	109
PHASE II - Final Design - 95% submittal									
Refine horz/vert alignments	0	1	0	0	1	1	0	0	3
Drainage Area Map	0	1	0	0	2	2	1	0	6
Utility research, adjustment, relocation	0	0	0	0	4	2	0	0	6
Cover sheet/Index Sheet (2 Sheets)	0	0	0	0	1	0	2	0	3
Typical sections (1 Sheets)	0	0	0	0	1	2	1	0	4
Layout sheet (1 Sheets)	0	0	0	0	0	1	1	0	2
Roadway Plan & profiles sheets (1 Sheets)	0	1	0	1	2	4	4	0	12
Traffic control plan (1 Sheets)	0	1	0	1	1	3	2	0	8
Cross sections	0	0	0	1	1	2	1	0	5
Signing & Pavement Marking	0	0	0	1	1	2	1	0	5
SWPPP	0	0	0	1	1	2	1	0	5
Misc. Details	0	0	0	0	1	2	1	0	4
Quantities	0	0	0	0	2	2	0	0	4
Cost Estimates	0	1	0	0	2	0	0	0	3
QA/QC	4	0	0	0	0	0	0	0	4
Subtotal 95% Design Phase Submittal	4	5	0	5	20	25	15	0	74

Task	Principal	Project Manager	Senior Hydrologist Engineer	Project Engineer III	Project Engineer I	Senior Technician	CAD Operator	Clerical	Total Hours
PHASE II - Bid-Ready 100% - Final Submittal									
Plan & profiles (Roadway)	0	1	0	0	2	0	0	0	3
Agency approvals (FBC Drainage District)	0	2	0	0	2	0	0	0	4
Quantities	0	1	0	0	2	2	0	0	5
Cost Estimates	0	1	0	0	4	2	0	0	7
Prepare complete project manual (specs, bid forms)	0	4	0	4	4	0	0	0	12
100% Sign & Sealed Bid ready Package	0	1	0	1	2	0	4	0	8
QA/QC	4	0	0	0	0	0	0	0	4
Subtotal 100% Bid Ready Plans - Final Submittal	4	10	0	5	16	4	4	0	43
PHASE II - Contract/Bidding									
Attend Pre-Bid & Pre-Con Meeting	0	2	0	0	2	0	0	0	4
Questions & Addenda	0	2	0	2	4	0	0	0	8
Tabulation & Recommendation of Bid	0	2	0	0	2	0	0	0	4
Subtotal Contract/Bid	0	6	0	2	8	0	0	0	16
Subtotal - Phase II - Final Design and Contract/Bidding	12	43	0	18	86	71	40	4	274
TOTAL - PHASE I and II	16	70	17	51	203	92	53	16	518

CobbFendley Manhour Estimate - Phases I and II - Expenses

SH 6 Left Turn Lane at Cullinan Park
 Fort Bend County Project No. 20407

Sponsor: Fort Bend County

Description: Adding left turn lane along SH 6 into Cullinan Park

Date: 11/3/2021

Expense Estimate					
Task	Deliveries	Miles	Mileage (\$0.56 per mile)	Reproduction	Total Cost
Project Management					
Attend status meetings (8)	\$0	400	\$224	\$0	\$224
Preliminary Engineering Report					
Conduct field visits	\$0	300	\$168	\$0	\$168
Final Design					
Miscellaneous milage	\$0	300	\$168	\$0	\$168
<i>Prepare complete project manual (specs, bid forms and front end docs)</i>	\$0		\$0	\$1,000	\$1,000
Bid Phase					
Attend Pre-Bid Meeting	\$0	200	\$112	\$0	\$112
Total Cost=	\$0		\$672	\$1,000	\$1,672

CobbFendley Fee Summary - Topo Survey (Additional Service)

SH 6 Left Turn Lane at Cullinan Park
Fort Bend County Project No. 20407



Sponsor: Fort Bend County
Description: Adding left turn lane along SH 6 into Cullinan Park
Date: 10/18/2021

TOPO SURVEY

10 HOUR DAYS FOR FIELD TIME
8 HOUR DAYS FOR OFFICE TIME

		STAFF TYPE HOURLY RATE	RPLS \$175.00	TECH II \$149.00	TECH I \$129.00	Drone \$235.00	Hydro \$340.00	3-M FC \$175.00	2-M FC \$149.00	RESEARCH \$129.00	CLERICAL \$82.00	GPS TCH \$129.00	GPS \$40.00	TOTALS
Task 1	Right-of-Way - obtain existing right-of-way maps and retrace on the ground.		4	0	16	0	0	0	12	2	2	0	0	36
			\$700.00	\$0.00	\$2,064.00	\$0.00	\$0.00	\$0.00	\$1,788.00	\$258.00	\$164.00	\$0.00	\$0.00	\$4,974.00
Task 2	Survey Control - locate/set existing project control points		4	0	20	0	0	0	20	0	0	2	2	48
			\$700.00	\$0.00	\$2,580.00	\$0.00	\$0.00	\$0.00	\$2,980.00	\$0.00	\$0.00	\$258.00	\$80.00	\$6,598.00
Task 3	Field Surveys - boundary recon, improvements, ROW mons, utilities & planimetrics, including 2D/3D DGN deliverables		6	4	18	0	0	0	30	0	0	0	0	58
			\$1,050.00	\$596.00	\$2,322.00	\$0.00	\$0.00	\$0.00	\$4,470.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8,438.00
Task 4	Survey Reports		2	0	2	0	0	0	0	0	0	0	0	4
			\$350.00	\$0.00	\$258.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$608.00
REIMBURSABLE ESTIMATE														\$0.00
TOTAL HOURS PER STAFF TYPE			16	4	56	0	0	0	62	2	2	2	2	146
TOTAL COST PER STAFF TYPE			\$2,800.00	\$596.00	\$7,224.00	\$0.00	\$0.00	\$0.00	\$9,238.00	\$258.00	\$164.00	\$258.00	\$80.00	\$20,618.00

CobbFendley Fee Summary - Right-of-Way Mapping (Additional Service)



SH 6 Left Turn Lane at Cullinan Park
Fort Bend County Project No. 20407

Sponsor: Fort Bend County
Description: Adding left turn lane along SH 6 into Cullinan Park
Date: 10/18/2021

**Right-of-Way Mapping, Exhibits, Metes & Bounds
for One (1) Proposed Parcel**

10 HOUR DAYS FOR FIELD TIME
8 HOUR DAYS FOR OFFICE TIME

STAFF TYPE		RPLS	TECH II	TECH I	Drone	Hydro	3-M FC	2-M FC	RESEARCH	CLERICAL	GPS TCH	GPS	TOTALS
HOURLY RATE		\$175.00	\$149.00	\$129.00	\$235.00	\$340.00	\$175.00	\$149.00	\$129.00	\$82.00	\$129.00	\$40.00	
Task 5	For One (1) Proposed Parcel: ROW Map & Exhibits, prepare updated right-of-way map sheet, parcel acquisition exhibit, metes & bounds and monument ROW	24	0	60	0	0	0	20	4	4	0	0	112
		\$4,200.00	\$0.00	\$7,740.00	\$0.00	\$0.00	\$0.00	\$2,980.00	\$516.00	\$328.00	\$0.00	\$0.00	\$15,764.00
REIMBURSABLE ESTIMATE													\$0.00
TOTAL HOURS PER STAFF TYPE		24	0	60	0	0	0	20	4	4	0	0	112
TOTAL COST PER STAFF TYPE		\$4,200.00	\$0.00	\$7,740.00	\$0.00	\$0.00	\$0.00	\$2,980.00	\$516.00	\$328.00	\$0.00	\$0.00	\$15,764.00

CobbFendley Scope of Services

SH 6 Left Turn Lane at Cullinan Park Fort Bend County Project No. 20407 From SH 6 northbound onto Cullinan Park access road

Scope of Services

Existing Conditions

The existing SH 6 is a 6-lane divided boulevard asphalt roadway (3-lanes in each direction) with raised median and open ditch drainage system. The project area is approximately 400 linear feet in length. The existing right-of-way (ROW) for SH 6 appears to be 260-feet wide, including a potential existing easement along the east side for existing utilities. The existing driveway at Cullinan Park is approximately 80-feet wide with a 30-foot median. The drainage along SH 6 in the project's vicinity is collected in roadside ditches moving from north to south and outfalls at Oyster Creek. There is off-site drainage at Cullinan Park coming to the right-of-way on the west side. Approximately 800 linear feet south of the project is the Hull Lane intersection with a traffic signal and southbound left turn lane, and approximately 400 linear feet south of the project is a bridge crossing over Oyster Creek. There are several existing utilities within project limits along SH 6 including power poles with overhead electric and telecom, various buried telecoms, natural gas pipelines, water lines, and water transmission lines.

Proposed Scope

The proposed project is comprised of 3 phases: Study (PER)/preliminary design, final design, and bidding/construction phase services. The scope of services will include surveying and professional engineering services. The project will involve expansion of SH 6 in the raised median to add pavement to accommodate a dedicated northbound left-turn lane from SH 6 into Cullinan Park with approximately 400 LF of new pavement and reconfigured raised median. The project geometrics and tapers will be designed based on the existing speed limits of this facility. Drainage will be evaluated to determine if mitigation will be necessary and develop alternatives to provide mitigation (if necessary), including potential expansion of roadside ditches and/or off-site detention pond between the Cullinan Park access road.

SH 6 is a TxDOT Houston District facility and will require review and approval of the proposed improvements. Effort associated with submitting the Final design milestones to TxDOT Houston District for their review and comments is included.

Schedule

The topo survey services are anticipated to be concluded in 60 days from the notice to proceed date. The PER is anticipated to be concluded in 120 days from the notice to proceed date (60 days after completion of topo survey services). The final design will be completed in 90 days after acceptance of the PER recommendations, pending submittal and review of the final design milestones to TxDOT Houston District. It is mutually agreed that the preliminary and final design efforts will be paid in lump-sum fee basis, to be billed monthly on a percent complete basis by respective tasks performed. The invoices to the County will also accompany itemized major tasks for preliminary design, final design, survey, etc. performed within the billing cycle.

Design Criteria

Applicable design criteria include, in order of priority, (1) Fort Bend County Engineering Design Manual (August 2020 Edition), *Fort Bend County Drainage Criteria Manual* (Fort Bend County Drainage District, November 1987, revised April 1999), (2) municipal design criteria if the project is located within the limits of a municipality and/or ETJ that has design criteria, (3) *Guidelines for Engineers Having Contracts with Harris County, Texas* (Harris County Engineering Department), (4) applicable Texas Department of Transportation design criteria (all County-maintained traffic signals, other items as applicable), and (5) the *Infrastructure Design Manual* (City of Houston Department of Public Works and Engineering, current version, used for infrastructure for which design criteria do not exist in the preceding criteria documents). Municipalities contributing funds to the project may review the submittals.

Topo Surveying – Additional Service

The specific survey limits are as follows: The linear topographic survey along 20407 SH 6 at Cullinan Park – from ROW to ROW starting 500' north of the Cullinan Park entrance to (and including) Oyster Creek, in Fort Bend County, Texas for an approximate total of 1,000 linear feet. This effort includes survey within Cullinan Park for approximately 500' inside the entrance to include the access roads, green space between the access roads, and any existing drainage structure connected in this vicinity.

1. Right of Way Surveying:
 - a. Obtain existing right-of-way maps from TxDOT. Perform field reconnaissance to retrace existing right-of-way.
 - b. Perform field data reduction and boundary reconciliation to calculate limits of existing right-of-way lines.
 - c. Prepare right-of-way base file, containing existing right-of-way line determinations, for use during design.
2. Survey Control:
 - a. Establish ground control points for project control. All benchmarks and control points shall be tied to the Harris County Flood Control District published monuments, reported in surface coordinate values, utilizing a surface adjustment factor of 1.00013. Horizontal datum will be referenced to Texas State Plane Coordinates (NAD83, 2011) and vertical datum will be referenced to NAVD88(2001adj). All project control will be checked via closed level loops for vertical ties and via GPS observations for horizontal positioning.
 - b. Prepare Survey Control Sheet(s) for the project to be delivered in PDF format.
3. Field Survey:
 - a. Onsite aboveground features will be shown within the project limits, including the following:
 - i. Spot elevations and cross sections of hardscape at approximate 100-foot intervals, including back of curb, gutter and pavement shots. Cross-sections shall extend 20 feet beyond the right-of-way lines where accessible.
 - ii. Create a Digital Terrain Model (DTM) to using MicroStation, deliverables will be in .DGN format, along with supporting XML file export.
 - iii. Aboveground visible utility features.
 - iv. All visible existing ramps, curbs, roadway/sidewalk details shall be shown, illustrating the geometric changes/transitions within the work area, including

- pavement types/transitions.
- v. All visible sanitary and storm manholes, including Top-of-Rim elevations pipe sizes/directions and flowline readings.
- vi. Wooded limits will be shown.
- vii. Landscape features shall be shown, including lights, poles, bollards, pavement/type(s), steps, etc.
- viii. Perform a one-call, to have utilities marked (locates performed by third party).
- b. 2D Planimetric drawing detail shall be provided in Microstation .DGN file format, including all extracted 2D features. Back of curb, gutter and pavement transitions will be extracted and utilized during the 3D DTM creation and will also be shown in the 2D planimetric view.
- c. Deliverables:
 - i. 2D Microstation DGN files, planimetric data
 - ii. 3D Microstation DGN files, along with supporting TIN and XML file exports
 - iii. CSV file of all points
- 4. Specific items excluded from this survey proposal are as follows:
 - a. Plan/profile drawings
 - b. Existing pipe network drawing detail
 - c. Subsurface Utility Location, all levels
 - d. Trenching/probing/excavation for utility verification
 - e. Any other services not specifically included within the description of the Services as described above

Right-of-Way Mapping, Exhibits, and Metes & Bounds – Additional Service

The specific right-of-way mapping and documentation for one (1) proposed parcel, if needed, for an off-site detention pond to provide drainage mitigation includes:

1. Right of Way Mapping and Parcel Exhibit:
 - a. Perform Right-of-way map update for the right-of-way map sheet affected (single map sheet submittal).
 - b. Prepare Parcel Exhibit and Metes & Bounds description for proposed detention parcel, limited up to 1-acre in size.
 - c. Set monuments for right-of-way and parcel corners, as required.

Phase I - Preliminary Engineering Report (PER)

CobbFendley will prepare and deliver a “30 percent” plan set as part of the preliminary design, consisting of all existing features shown in plan and profile, and proposed improvements with plan & profile with minor annotation. These plans, along with a typical section sheet, are the only drawings that are necessary at this point.

The purpose of this PER is to clearly depict a horizontal and vertical alignment design, incorporate the new project limits, and to document these seven (7) stated goals:

1. Establish geometrics with a typical cross section,
2. Evaluate drainage and potential mitigation needs,

3. Identify the existing right-of-way, potential mitigation sites (if needed), and proposed right-of-way needs and ownership info (if needed),
4. Identify existing utility locations and determine potential conflicts,
5. Identify critical path items,
6. Identify problem areas and potential resolution(s), and
7. Prepare a reasonable construction cost estimate.

CobbFendley will not prepare a Presentation-quality document as the report will remain internal to Fort Bend County Engineering staff and the County's project management consultant. The updated PER will include a narrative, applicable plans, a preliminary construction cost estimate, and an exhibit showing potential right-of-way and mitigation sites (if needed), as applicable. CobbFendley will deliver the PER report electronically in PDF format.

Phase I - Drainage Study

The drainage study report is prepared to document the existing conditions and provide basic design considerations along with estimated construction cost of drainage related items. The following tasks will be performed and will be included in the drainage study report:

1. The Engineer shall obtain, review and evaluate available data for the study area including TxDOT & FBCDD as-built plans, the latest version of the reference standards and criteria and other information.
 - a. Obtain, review, and evaluate available existing public and private utility information relevant to the characteristic of the existing drainage systems and outfall drainage channels/systems for the study area.
2. Perform field visits to the study area and vicinity to photograph and adequately document existing conditions and special concerns.
 - a. Research and review the reported findings of all available, previous studies related to the study area and vicinity.
 - b. Gather existing ditch, culvert, and overland flow information using LiDAR and collected survey data. The survey shall include the location of all drainage appurtenances (i.e., ditches, culverts, equalizers, inlets, manholes, and detention facilities) to be adequately identified to display their respective geometric positions within the right-of-way. In addition, the identification of high points in roadways and ditches shall be determined from the best management practices during the site visits.
3. Perform Existing Condition Analysis:
 - a. Analyze LiDAR Data to determine existing condition overland sheet flow patterns
 - b. Identify and locate existing condition outfall locations and drainage systems
 - c. Analyze existing terrain for overland flowpaths
 - d. Plot Existing WSE from receiving stream (Oyster Creek) for 10-, 25-, and 100-yr rainfall events along existing roadway profile
 - e. Determine Existing Condition drainage areas – Existing condition drainage areas within ROW will use ultimate ROW width, outside contributing areas will be calculated separately from ROW.
 - f. Create drainage area maps

- g. Perform existing condition hydrologic calculations (2-, 10-, 25-, 100- and 500-year rainfall events) based upon Atlas 14 rainfall data and Fort Bend County Drainage District (“FBCDD”) drainage criteria.
 - h. Analyze conveyance capacity of existing condition roadside ditches, culverts and contributing storm sewer systems (where applicable)
 - i. Analyze conveyance capacity of existing condition drainage system, roadside ditches, and culverts to identify problem areas and establish baseline condition for mitigation.
4. The Engineer shall obtain available HEC-RAS models from the FBCDD for the identified outfall locations (Oyster Creek) to obtain water surface elevations at the identified outfall locations for starting tailwater information for the 10-, 25-, 100-, and 500-year rainfall events.
5. Perform Proposed Condition Analysis:
 - a. Determine Proposed Condition drainage areas within ROW and create drainage area map
 - b. Perform proposed condition hydrologic calculations utilizing Atlas 14 rainfall data (2-, 10-, 100- and 500-year rainfall events)
 - c. Perform comparison between existing and proposed condition hydrology to determine storage volume required resulting from change in impervious cover
 - d. Determine required outfall size to convey 2-, 10-, 25- and 100-year flow to outfall(s)
 - e. Estimate detention volume required to mitigate impacts associated with the project location and routing of offsite flow
 - f. Develop proposed drainage conveyance system
 - g. Revise HEC-HMS/RAS models to include proposed improvements and compare against revised existing condition (if applicable)
 - h. Develop measures to mitigate increases in water surface elevations and/or flow associated with the proposed roadway improvement project (up to 3 alternatives).
6. The Engineer shall prepare a report with maps, exhibits and an estimated construction cost for drainage related items (including acquisition of additional ROW). Drainage meeting will determine which option the County/TxDOT would like to move forward with and the final analysis will be done to the one option. The study/report will conform to FBCDD standards and approved by TxDOT.

Traffic Engineering

Detailed Traffic Control Plans (TCP) will be prepared based on the approach and the number of construction phases decided in the conceptual TCP as part of the study. TCP will be designed according to the latest edition of The Texas Manual on Uniform Traffic Control Devices. Standard TxDOT details will be used as available/applicable.

SWPPP

Storm water pollution prevention plans (SWPPP) will be prepared and included in the construction documents and project manual based on FBC criteria.

Phase II - Final Design Deliverables (70%, 95%, and Final submittal)

The goal is to prepare construction drawings and specifications accurately and efficiently. CobbFendley

will deliver 70 percent and 95 percent, 100 percent completed plans, and the final bid ready submittal at the scheduled milestones. These submittals will include but not limited to design drawings, a specification table of contents (and/or special specifications, as applicable), and a construction cost estimate.

SH 6 is a TxDOT Houston District facility and will require review and approval of the proposed improvements. Effort associated with submitting each of the Final design milestones to TxDOT Houston District for their review and comments is included.

Due to uncertainty of potential mitigation needs and site verification, the detention design, grading, and plan development are excluded from this scope of services at this time until more information is known.

The 70 percent submittal will include the following deliverables:

- Cover sheet (Fort Bend County name and seal, project name with limits, vicinity and location maps, names of County Judge and Commissioners, signature line for County Engineer, design firm name and registration number)
- Typical and non-standard cross sections (not-to-scale proposed sections with station limits for each section; show pavement/subgrade material and thickness, right-of-way and roadway width, applicable dimensions, profile grade line, and general location of existing and proposed utilities)
- Overall project layout (scale as appropriate with sheet references left blank since they are subject to change in subsequent submittals)
- Survey control map
- Drainage area map with hydraulic calculations (display calculations clearly for future use by area developers)
- Plan and profile sheets (1"=20' plan scale but printed half-size for a 1"=40' scale; all existing and proposed facilities correctly shown in plan and profile; separate drawings for roadway and storm sewer are not necessary; detailed callouts not required at 70%)
- Traffic control plan (phasing and traffic control; avoid detours unless approved by the County; use of construction zone standards is encouraged)
- Storm Water Pollution Prevention Plan (drawings and text; drawings may consist of a layout and details)
- Specification table of contents (**TxDOT specifications**)
- Bid form with estimated unit and total costs (spreadsheet based)

CobbFendley will submit electronic copies of the 70 percent completed plans on 11-inch by 17-inch sheets in PDF format for the County's review.

The 95 percent completed plans will be stamped with 95 percent review and are considered complete.

This deliverable will encompass all the 70 percent requirements plus the following:

- General notes sheet
- Verify earthwork quantities with cross sections at 100-foot intervals (only non-standard sections should be included in plans)
- Signage and pavement marking plans (signs may be shown on plan and profile sheets and use of pavement marking standards is encouraged)

- Standard construction details (**TxDOT standard details**)
- Project manual (bid form, specification table of contents, any special specifications, or conditions; contract documents excluded)
- Responses to 70 percent comments

CobbFendley will submit electronic copies of the 95 percent completed plans on 11-inch by 17-inch sheets in PDF format for the County's review.

Final Submittal – Final design efforts will be considered complete when comments to the 95 percent submittal have been addressed.

All final design efforts will be paid in a single lump-sum fee, to be billed monthly on a percent complete basis.

Phase II - Bid Phase Services

Upon completion of final design services, the County will determine an advertisement and bid opening schedule. All administrative project manual documents (cover page, Notice to Bidders, etc.) will be prepared by the County, and CobbFendley will be provided with the document in Adobe Acrobat (pdf) format.

A single project manual file in Adobe Acrobat format will be prepared which will include the following:

1. Administrative documents,
2. The bid form (prepared by CobbFendley),
3. A sealed specification table of contents, and
4. Applicable specifications and documents.

CobbFendley will prepare and provide to the County a single file in Adobe Acrobat format for the entire drawing set excluding the cover sheet, which contains approval signature(s), all drawings will be printed directly to Adobe Acrobat format with electronic seal and signature.

CobbFendley will provide the following services during the Bid phase services:

1. Prepare 27 compact discs, each containing the project manual file and the entire plan set. Of these, 25 compact discs will be delivered to the County Purchasing Agent for advertising, and two discs will be provided to the County's project management consultant. Hard copies of these documents are not required and will not be produced.
2. Attend a pre-bid meeting at the County Purchasing Office.
3. Briefly describe the project.
4. Preparation of meeting minutes will be by others.
5. Receive bidder questions and clarifications from the County's Purchasing Agent.
6. Provide answers to bidder questions, clarifications, and any other required document changes and prepare an addendum to include the responses and changes. The addendum will be distributed by the County's Purchasing Agent.

After the bid, the County's project management consultant will prepare a bid tabulation and provide a copy to the design consultant for filing.

Prior to the preconstruction meeting, the project management consultant will inform CobbFendley of how many drawing and project manual sets are required, and the design consultant will provide these documents at the pre-construction meeting.

Phase III - Construction Phase Services

The construction duration for this project is estimated to take 4 months, pending the unknowns of the potential mitigation sites/construction and utility relocations.

Monthly billing will include a breakdown of hours spent by personnel in the various employee categories, at billing rates agreed to by the County and the design consultant. Reimbursable expenses, such as scanning and reproduction, will be billed at actual cost (no markup). The County is tax-exempt and will not reimburse tax expenses. The project management consultant can provide a tax exemption form to the design consultant to ensure that tax is not charged.

SERVICES SPECIFICALLY EXCLUDED FROM COBBFENDLEY'S SCOPE OF SERVICES INCLUDE:

1. *Environmental investigation, assessment, documentation, permitting, etc.*
2. *Geotechnical investigation*
3. *Subsurface Utility Engineering investigations (Quality Levels B and A)*
4. *Utility design services*
5. *Non-standard small signs, large signs, and overhead signs and structures*
6. *Landscaping, irrigation, and hardscape design*
7. *Detention design, grading, and plan development (excluded at this time due to uncertainty of potential size and scope)*